WEEKLY EDITION
OF THE
AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL
PUBLISHED BY
THOMAS G. NEWMAN,
EDITOR AND PROPRIETOR,
925 WEST MADISON-STREET, CHICAGO, ILL.
Weekly, $2 a year; Monthly, 50 cents.

Vol. XXI. March 25, 1885. No. 12.

☞ In answer to several correspondents we will say that Alsike clover blossoms just after the white clover begins to bloom, and lasts till basswood yields nectar. It would be better to pasture the Alsike until about June 20, and then it would bloom about the time when basswood ceases, and thus prolong the honey season some, when something is most needed for the bees to work upon.

☞ From the *Bienen Zeitung* we learn that Herr Dathe, a bee-master of Hanover, has been to Ceylon, and describes the bees there found. He says that "the sting of *Apis dorsata* is sharp and severe, but the action is clumsy, so that this large bee can be removed before it is inflicted." Of *Apis Indica* he says: "They closely resemble Italian bees; they live in the cavities of trees, in the gardens of the natives, as well as in the forests." Of *Apis florea* he states that "they are of little value, only producing a small quantity of honey."

☞ Frank Benton has issued a Leaflet in which he tries to *sting* Prof. Cook, Mr. T. W. Cowan, Mr. H. Alley, and the editor of the BEE JOURNAL. He puts us all down as "know-nothings.' Such *egotism* is truly refreshing!

☞ From Jacob Ruch, Mt. Eaton, O., comes a reversible-frame device. It consists of a wire projecting-end for the top-bar, which turns down on the side-bar when not needed. It can be up or down in an instant, and is one of the best devices out of the multitude which has been sent to this office.

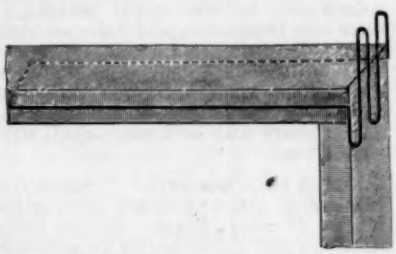
☞ Our readers will regret to learn that our friend, the Rev. L. L. Langstroth, has had an attack of paralysis, as will be seen by the following letter, dated Oxford, O., March 13, 1885:

For the information of inquiring friends, I wish you to state that three weeks ago I had an attack of paralysis, affecting my left arm and leg. I have recovered a comfortable use of my limbs, but my general health continues, as it has been for the last 15 months, to be very feeble.

Your friend,
L. L. LANGSTROTH, *per A. L. C.*

☞ Miss Emily C. West, of Flint, Mich., has sent a device for a reversible frame, as shown by the illustration. It is made of wire and slips into the top-bar of the frame. She says:

"I think that the illustration will show the simplicity of the arrangement. It can be put upon any frame just by making two brad-awl holes in the center of the end-bars. The wires



at the side keep the frame upright, and the projections cause it to rest firmly upon the edge of the hive. The frame can be reversed in an instant, and there is no chance for sticking it fast to the frame. It can be made from a single piece of wire, which makes it quite inexpensive."

☞ In the report of the International Congress, pages 154 and 155, there are two essays, one by Mr. Viallon, the other by Mr. Dadant, which seem to contradict one another in regard to the cost of beeswax. The contradiction is only apparent, and not real; as in Mr. Viallon's tests, no account was taken of the large quantity of honey consumed by the brood reared in the hives containing empty combs, and it is evident that the colonies in these hives reared a great deal more brood during those 28 days than the colonies that were given empty frames. The quantity thus consumed, and the greater strength of those colonies for a future harvest, would probably make up the difference between those reports, on the cost of wax. We cannot, however, refrain from thanking Mr. Viallon for his experiments, so carefully reported, as they are very useful to throw light on the subject.

☞ The losses of bees have been quite large all over the North, where they were wintered on the summer stands. Those wintered in cellars are generally reported to be in good condition. Those who have bees to sell will find plenty of buyers, if they are wise enough to let it be known. We have had many inquiries already for information as to where to buy bees. Those having bees to sell should advertise them *at once*.

☞ According to *L'Apiculteur*, the sale of honey in France was not satisfactory last season. Much of it yet remains unsold. Marseilles reports 50,000 kilograms of beeswax on hand, and the receipts exceed the sales. A kilogram is about two pounds.

☞ Mr. Elijah A. Daggitt, White House, N. J., has sent us another device for reversing frames. It consists of a tin arm to reverse a double "tin corner" made similar to the novice tin corner. It would hardly be substantial enough to suit the generality of bee-keepers, we think.

☞ From Mr. W. H. Smith, Mt. Salem, Ont., comes another device for reversing frames. It consists of a piece of hoop-iron with the top turned over to make a rest for the frame. This has two holes, and a slot slips over 2 screws; a third screw below allows the reversing.

☞ By the courtesy of Secretary S. M. Locke, we give a condensed report of 3 sessions of the New York State Bee-Keepers' Convention. The rest will appear as soon as we receive it.

☞ By the *British Bee Journal* we see that the Reversible-Frame Craze has now reached that country. There is no end to the number of devices.

☞ The exports of honey from Chili in 1883 were 1,310,256 kilos, valued at $201,392. Of wax, 99,624 kilos; value, $85,617.

☞ The Missouri Convention has been changed. See page 189.

Catalogues for 1885.—We have received the following:

Williamson & Bro., Lexington, Ky.
G. M. Doolittle, Borodino, N. Y.
J. W. Clark, Clarksburg, Mo.
Flanagan & Illinski, Belleville, Ill.
W. S. Cauthen, Pleasant Hill, S. C.
Jas. O. Tacey, Tavistock, Ont.
Hilas D. Davis, Bradford, Vt.
McClintock Bros., Ravenna, O.—Berries.
Isaac F. Tillinghast, La Plume, Pa.—Seeds.

QUERIES

WITH

REPLIES by Prominent Apiarists.

Extra Combs for Extracted Honey.

Query, No. 37.—What is the cheapest and best way, all things considered, to obtain extra combs for producing extracted honey in an apiary which has previously been run for comb honey exclusively, and the apiarist having no surplus combs on hand.—Subscriber.

DADANT & SON reply: "Use comb foundation."

JAMES HEDDON answers thus: "The cheapest method of getting such combs, that I have tried, is by the use of full frames of comb foundation. Get as many drawn out as you can before the honey-rush comes."

DR. J. P. H. BROWN replies as follows: "If I desired surplus combs as soon as possible, I should remove combs from the outside of the brood-nest, and fill in with frames of foundation, just as soon as the weather would admit of the bees drawing it out."

DR. G. L. TINKER says that "the cheapest and best way is to use a section-case that may also be used with extracting-frames."

PROF. A. J. COOK answers as follows: "Enter into partnership with the bees, and get them to build combs on shares from wired foundation. With plenty of feed they will never break the contract."

W. Z. HUTCHINSON replies thus: "One year ago I should have said, 'put on an upper story, the frames of which are filled with foundation;' now I will say I think that is the best plan. Let us experiment a little more with foundation."

G. M. DOOLITTLE says: "In such a case as this I think that I should buy foundation, for the reason that if I tried to get comb built in the upper stories, too large a proportion of it would be drone-comb."

J. E. POND, JR., answers thus: "My plan would be to select two or three or more colonies of known comb-building proclivities, give them frames filled with foundation, feed them very liberally on sugar syrup, and keep them at work drawing out the foundation until a sufficient number had been completed. For this purpose a cheap quality of sugar can be used, and it will be a means also of profitably disposing of unsalable honey."

G. W. Demaree replies as follows: "The cheapest way to get combs for extracting purposes, is to have them drawn out by the bees, using full sheets of foundation. Wire in the frames is not necessary if a good article of foundation can be procured, and the combs are to be drawn out in the upper story."

How to Build a Honey-House.

Query, No. 38.—I am contemplating the building of a honey-house and workshop, in the spring, so I am on the lookout for the best plan for such a building sufficient in size for the storage of fixtures used in the apiary and the comb honey gathered by 200 colonies. I should prefer a two-story building, if that be considered the most practicable. —Hinsdale, N. Y.

PROF. A. J. COOK says: "I think that the plan which I give in my Bee-Keepers' Guide is a very good one. I can suggest no better."

G. M. DOOLITTLE answers as follows: "My workshop is 16x34 feet on the ground and 2 stories high, having 14-foot posts. In the southwest corner, below, is partitioned off a room 7x10 feet for a honey-room, in which I have stored 10,000 lbs. of comb honey at one time. The outside is painted a dark color to draw the heat from the sun, so the room will be very warm to ripen the honey. To go into detail would be too long for this department."

DR. C. C. MILLER replies thus: "Make it unnecessarily large and with a floor able to bear great weight. I have one 18x24 feet, and 2 stories high, and if I had no other room it would be too small for an apiary of 200 colonies. The work-room and honey-room should be very close and warm; the upper story may be a mere shell with a good roof."

JAMES HEDDON says: "Space forbids going into any detail description of our choice of plans. In my home apiary of 200 colonies (on an average) I have built a 2-story building, 18x30 feet, with outside stairs, and a cellar the full size of the house, and 8 feet deep. It cost about $600. I use wire-screen doors, and the windows (large) revolve within wire-screen bays. Bees, mice and ants cannot get in, unless at the doors or windows. I have two other good sized buildings in the apiary. This one is for storage of combs, etc., up-stairs, and a honey-house below. No carpentering is done in it. Always build nearly twice as large as you first think you need."

H. R. BOARDMAN replies thus: "There is only room in this department to give a few suggestions in regard to building a bee-house. I prefer a one-story house, double-walled, floor overhead on top of the joists, bee-tight, frost-proof and dry; the ground-floor cemented to exclude mice and ants, and to prevent disturbance from jarring; ventilated from above by means of gable shutters through an air-chamber or room adjoining the bee-room or rooms, and provided with a stove; windows small and hung on pivots in the center of the sash, to tip out from the bottom; and double doors for winter and screens for summer, and joists overhead spaced right to hang the surplus combs and frames between them on strips or rabbets nailed to their sides. For 200 colonies I would have a long building with 2 bee-rooms and the air-chamber between. One hundred colonies are enough to store in one room. There are serious objections to having a workshop and bee-house combined. The concussion of pounding will seriously disturb the bees, though a partition wall intervenes; even talking loud in a bee-room will produce a disturbance."

Purifying Beeswax.

Query, No. 39.—What is the best way to purify beeswax for making thin foundation? —Boyceville, Wis.

JAMES HEDDON says: "The best of the processes in general use is, I think, to melt the wax and pour it into deep, flaring tin-tanks, packing the tanks to hold the liquid wax for several hours; then when it cakes the dirt will be at the bottom. Both the boiling and dipping tanks should also be made and manipulated so as to hold back foreign substances."

W. Z. HUTCHINSON answers thus: "Allow it to cool slowly over a large body of water."

G. M. DOOLITTLE replies as follows: "The best plan that I know of, is to melt 10 lbs. of wax in a vessel, after having first put in the same, one pint of strong vinegar, together with one quart of water. After all is melted, set the vessel from the fire, and wrap it in several thicknesses of blanket or old carpet, so it will cool slowly. By this plan the wax is in agitation while liquid, and all impurities worked to the top or bottom. If strained before putting through this process, there will be nothing but fine dross at the bottom, with nothing on top."

Brood-Rearing Under the Snow.

Query, No. 40.—My bees are under the snow yet. On Feb. 9 we had another snow storm, and my hives have been out of sight since Jan. 17. There is no chance for water to run into them, and the bottom-boards are cut off even with the hives which are tipped to the front, and ¼-inch holes are above the entrances so the bees can get plenty of air. Will they get too warm and start brood-rearing?—East Saginaw, Mich., Feb. 16, 1885.

PROF. A. J. COOK remarks thus: "I never succeeded better in wintering bees than when they were covered just as described. I have never publicly recommended this plan, as it is usually better to have the hives in sight; at least it is more satisfactory."

DR. C. C. MILLER says: "Not likely."

DADANT & SON answer thus: "Yes, bees can rear brood under the snow."

W. Z. HUTCHINSON replies as follows: "In extremely cold weather, bees are warmer under the snow, but in the weather we are likely to have from now on, bees would be warmer out of the snow. I do not think that the snow will start them to brood-rearing."

JAMES HEDDON answers as follows: "I should have no fears of the bees getting too warm. Colonies usually commence brood-rearing both out-doors and in-cellars, before this date."

G. M. DOOLITTLE says: "After losing every colony without an exception, which were drifted under the snow for a period of 3 weeks or more, I now shovel down to the entrance of each hive so covered, once a week, so as to let the cold air on the front of the hive. With me, the bees always get too warm under the snow, and start a large amount of brood, which is certain to produce disease unless frequent flights occur."

Introducing Queens.

Query, No. 41.—I wish to introduce a number of Italian queens into new colonies, next season. Can this be done safely by removing the old queen and allowing the Italian queen to enter the hive with the bees? Can I return the old queen to the parent colony, and by giving the bees more room, prevent after-swarms?—Rockdale, Iowa.

JAMES HEDDON remarks thus: "To the first question I answer, no; not with any certainty. To the last question, yes, as a rule, in most locations and seasons."

PROF. A. J. COOK answers thus: "It is not invariably successful. I prefer to cage the queen for 36 hours. The last part of the question is indefinite; I can only answer no, as I understand it."

W. Z. HUTCHINSON says: "To both of these questions I say 'yes.'"

DR. C. C. MILLER replies thus: "To both questions I would reply, uncertain."

DR. G. L. TINKER answers as follows: "When nectar is coming in freely, it is quite safe to remove the queen of a colony at mid-day, and let another queen run in at the entrance after all other bees have ceased flying, just at dusk, using a little smoke immediately after the queen goes in. This is Mr. Pond's method, but when there is a scarcity of nectar, I know of no safe plan, that I have tried, to introduce queens to full colonies, but to remove the old queen, and in 9 days remove all queen-cells. Cage the queen on the frames, feeding freely; on the evening of the second day, proceed as above. To the latter question, no."

G. W. DEMAREE says: "It would depend much on the time the work was done. If done right in the best of the honey season, there is less risk. But, according to my ideas of 'safe' introducing, such a method can never be depended upon. I prefer to cage the queen, using a cage so arranged that I can release the queen without disturbing the bees, relying on my own judgment as to the time to release her. To the last question, I answer no."

☞ We often get a number of notices and advertisements on Mondays, intended for the next BEE JOURNAL. As we close the forms on Saturdays, all such notices *must be here* on Saturday morning, or cannot appear until the following week.

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark ⊙ indicates that the apiarist is located near the centre of the State named: ♂ north of the centre; ♀ south; ○→ east; ←○ west; and this ♂ northeast; ○↖ northwest; ○↘ southeast; and ♀ southwest of the centre of the State mentioned.

For the American Bee Journal.

Temperature of Bees in Winter.

16—G. M. DOOLITTLE, (40—80).

If the readers will turn to page 533 of the BEE JOURNAL for 1884, they will there see that I found that the temperature at which bees live the longest while caged, was about 64°. From the interest I took in the experiments then given, and for other reasons, I became desirous of knowing the temperature maintained in the centre of a healthy, quiet colony of bees. As I had often tried to get the temperature of a colony of bees in the summer with a common mercury thermometer, I knew that nothing reliable could be obtained with such an one in cold weather, for the reason that it would change so rapidly in withdrawing from the hive that nothing accurate could be obtained.

I next thought of a physician's self-registering thermometer, and partly bargained for one, but upon seeing it, I found that while something accurate might be obtained by it in the hottest days in summer, it would be of no use in winter, as it would register no lower than 92°. After some corresponding and searching, I finally found a spirit thermometer which would accurately register both heat and cold. This I purchased about the middle of last January, and was only deterred from experimenting at once by the extreme coldness of the weather, for I disliked to disturb my bees in very cold weather, which I must do in order to get the thermometer between the combs.

The space required for the instrument was ¾ of an inch, while the most of my combs gave only a half-inch space between them. After waiting in vain a week or more for it to come warm so I could move the frames when the bees, which would naturally fly out, could return, I concluded that the cold weather was a golden opportunity for my experiments. Putting the thermometer in my coat pocket, I went to one of my chaff-packed hives which contained one of my best colonies of bees, carefully lifted the cover and sawdust cushion, which is 4 inches thick; I now quickly removed the quilt and pried the frames apart by shoving the first two farthest from the cluster of bees close together, and the others so as to leave a bee-space between them. In less than ½ minute the centre of the cluster was reached, and the thermometer inserted, having previously been set at about 45°, which was the temperature in my coat pocket.

When I lifted the quilt, the cluster of bees was as quiet as any colony I ever saw, yet in less than ½ minute the bees were flying from the centre of the cluster, and dying in the zero air. (I wish to call Mr. Clarke's attention to this, and ask him if they could be said to be hibernating). The hive was closed as quickly as possible, notwithstanding which many bees lay dead about in spite of my best efforts to not lose any. This was at 4 p. m., while a mercury thermometer on a post near by marked zero. The next morning, at 8 a. m., the mercury stood at 6° below zero, when I went to the hive to get the temperature, but before I could get the thermometer out, and the bees off from it, I found it sinking so rapidly that I really only obtained the heat the colony had attained, resulting from the commotion caused by my disturbing them. This heat registered 87°, with a temperature below zero outside.

I now saw that I must work my thermometer the other way, so I placed it near the stove until 100° above zero was marked on the cold side, when I set it, wrapped it in a warm cloth, and took it to the hive. The weather now became severe and blustering, so the hive was left undisturbed for 5 days. During this time the mercury went as low as 16° below zero, but in the afternoon of the fifth day, it stood at 18° above. I now took out the thermometer, having a hot cloth ready to put it into as soon as taken from the hive. It was immediately taken to a warm room, when I had a perfect register of 63° as the lowest point reached during the five days of extreme cold. In this way I have kept on experimenting for the past five weeks with several colonies until I have arrived at the following, which I think perfectly accurate when a colony is in perfect quietude:

When the mercury stands at zero outside, the temperature in the centre of the cluster is 64°, and for every 15° of change from this point (outside), the change in the cluster is one degree. Thus, 16° below, gave 63°; zero, gave 64°; 15° above, 65°; while 28° above (the highest it has been during my experiments), gave 66° in the cluster. All experiments were conducted in chaff-packed hives, as the first described. After this, I placed the thermometer within ½ inch of the cluster, at the side and on top, and found that the temperature was from 46° to 52°, according to the temperature outside, and the place where put, it being the warmest above the cluster. Some of the colonies experimented with had only stores of sugar syrup with no pollen, while others had honey with plenty of pollen, but I could see no difference regarding the temperature in favor of either.

During all these experiments the loss of bees has been considerable, owing to flight from the hive, and their clinging to the thermometer when drawn from the hive. One of the colonies has become uneasy, and shows signs of bee-diarrhea. With but one experiment, I find that this once quiet colony maintains a temperature of 75°, and if the weather does not soon give a chance for flight, they are ruined. I think that brood-rearing is being rapidly pushed forward, but I cannot well examine to see.

By the above it will be seen that bees must burn much fuel at such times when the weather is as it has been during the past five weeks, in order to warm the temperature from 16° below zero up to 63° above. This fuel is, of course, honey, where sugar syrup is not furnished. The question now arises in my mind whether all of us who are recommending outdoor wintering, are not losing in dollars and cents by the extra amount of honey which must be consumed over cellar wintering; for surely it cannot take as much fuel to warm a temperature of 45° to 65°, as it does one of 16° below zero to the same point.

Borodino, ⊙ N. Y.

For the American Bee Journal.

Diarrhea—Harmonizing Theories.

WM. BALLANTINE.

Some years ago Mr. Heddon advanced the somewhat startling theory that pollen (the natural food of bees), was the cause of all our "winter's discontent." Some were surprised at its boldness, others were struck with its novelty, while some were tempted out of curiosity to investigate it. It has been weighed in the balance and found wanting. But has no good resulted from it? Far from this; it has been the means of eliciting some truth.

Prof. Cook has given a *quasi*-endorsement of the so-called pollen theory. He thinks that colonies destitute of this nitrogenous food will winter better than those which have it. But Mr. Doolittle thinks that the cause of bee-diarrhea is when colonies are breeding, and when the young bees are prevented from having a flight. This he has sustained by certain observations made at various times in his own apiary. I believe that there is a moiety of truth in this, although I have never observed the phenomenon.

Reasoning from analogy, we are brought to the conclusion that insects as well as other animals, have their intestines full of a peculiar kind of matter, that must be voided shortly after birth to secure the healthy and vigorous action of the system. This matter is technically known as *meconium*. An infant, a calf, a colt, and even a lamb, will not thrive until this passes off. Is it then not a fair inference to say that the young of bees must, in like manner, have an opportunity to void this excrement to insure health and vigor?

Let us next endeavor to harmonize the theories of this trio of bee-*savants*.

It is a well-known principle that bees cannot breed without pollen. If, then, there is no pollen in a colony, breeding is out of the question. This being the case, according to Mr. Doolittle's theory, there will be no diarrhea, because there are no young bees to suffer. This will chime in with Prof. Cook's experience. With him, colonies winter better that have no pollen, and consequently no breeding.

Mr. Heddon finds that some of his colonies are dying with diarrhea, and discovers that all so affected have pollen; he has not made the observations of Mr. Doolittle, but infers that pollen is the true cause of the bee-mortality. His inference, though wrong, in charging the whole evil upon the pollen, which is as innocent of producing the death of his colonies as Vennor's theory of this being a mild winter was in producing the reverse, is, nevertheless, to a certain extent, in harmony with Mr. Doolittle's theory, which inevitably recognizes the presence of pollen.

If truth has thus been elicited, Mr. Heddon has assisted, Prof. Cook's experience has corroborated, and Mr. Doolittle's observations have contributed much to its discovery. These men are, then, not unlike the three princes in the Arabian tale, who were enamored with a fair lady, each being severely wounded with Cupid's arrows. The object of their affection being herself unable to decide the question, by making a choice, it was agreed that the three princes should travel for a year, in any portion of India, of their own selection, and the one who would secure the greatest benefit for himself and mankind in general, would be the happy party. One procured a piece of carpet of so potent a power that it would transport its owner and others whom he permitted to sit upon it, to any part of the globe desired. Another procured an eye-glass that would enable its owner and others to see any object wished. The third procured an apple of such divine power as to heal every one however diseased, that would but smell its perfume. Having all three met at the expiration of the time, at the place agreed upon, each confident of being the victor, one happened to look into the glass, and saw the object of his affection in the agonies of death. This being announced to the other two, the possessor of the wonderful apple exclaimed: "If I only were there I could cure her in a moment." The owner of the magic cloth said, "All right; let us three just sit down on this cloth and we will be there instantly." They did so, and by the application of the apple, the object of their love was immediately restored. But the question who the happy one should be, was just as undecided as ever. The one with the glass claimed that if it had not been for it, they would have remained ignorant of the sickness of the princess; the one with the cloth asserted that it was instrumental in bringing them to her assistance; while the one with the apple of marvelous virtue, claimed that the other things were good, but if it had not been for his apple, the princess would have died in *their* presence.

So Messrs. Heddon, Cook and Doolittle are all entitled to some credit, if we have at last found the truth on this subject; but if we have not discovered it, progress is made. Let Mr. Heddon proclaim any and every bold and novel view that his fertile and imaginative mind can suggest; and it will be tried in the crucibles of hundreds of philosophical minds, and purged from its dross. If it contains the millionth part of a grain of truth, it will be eliminated and carefully added to the already accumulated and fast-accumulating treasury of bee-science; if it does not contain a single atom of truth, it must and will be rejected.

Sago, ⊙ Ohio.

Northeastern Convention.

The sixteenth annual convention of the Northeastern Bee-Keepers' Association was held in the City Hall at Syracuse, N. Y., on Jan. 21-23, 1885.

FIRST DAY.

The convention was called to order at 1:30 p. m. by President Root, and after the calling of the roll, the Secretary read the minutes of the last meeting, which were adopted. The Treasurer then made his annual report, showing a balance on hand of $43.39. On motion, this report was accepted.

On motion of the Secretary, it was agreed that all the committees should report on the morning of the 23d. The Secretary appointed Silas M. Locke as reading clerk. An essay on "The Coming Bee," by James Heddon, was then read and discussed.

"Is stimulative feeding profitable and practical?" It was the general opinion that bees should not be stimulated to undue activity in early spring, as it causes them to breed too rapidly and waste while on the wing, in search of water, etc. Different methods of feeding were described, and the convention seemed to favor placing the food inside of the hive, in preference to feeding in the open air. All agreed that it was beneficial to feed the bees between fruit-bloom and white clover.

"Will it pay to sow or plant for honey?" It was generally concluded, that it would pay, especially on poor land, to sow for bee-pasturage; and abundant evidence was given to prove that Alsike clover not only yielded well as a honey-plant, but also made a fine quality of hay.

Bee-keepers were advised to set out as many basswood trees as possible. They thrive best by streams of water, or in a somewhat moist soil, but will grow in almost any good soil. They should be set out almost 10 feet apart. One of the members spoke in favor of the yellow locust, as it comes into bloom between fruit and clover bloom, and also was very valuable for posts. Mr. Vandervort got honey from the pea-vine or white clover. The farmers in his locality pronounce it excellent for hay.

"Spring dwindling." A number of causes were suggested, such as poor wintering, which caused diseased bees; a poor quality of honey for winter food; a lack of sufficient winter stores, properly placed; an undue consumption of food, during winter; unusual activity in early spring, caused by disturbing the bees (which was considered detrimental), and

too much fall honey. E. J. Hetherington thought that spring dwindling was the result of constitutional weakness caused by poor wintering conditions that impair their vitality. He also thought that the conditions that governed bee-keeping had materially altered within the last 15 or 20 years, bringing atmospheric changes. As a prevention, it was advised that a good quality of honey or sugar syrup, well sealed, be given the bees for winter stores, and not fed "too late" in the fall, 25 to 30 pounds being sufficient. Keep the bees warm, snug and dry, and do not disturb them so as to create undue excitement too early in the spring.

A committee was appointed, before whom all kinds of questions shall be submitted, before such question shall be brought before this convention. The following were appointed as such committee: Arthur Todd, C. G. Dickinson, and G. H. Kinckerbocker.

Adjourned to meet at 7 p. m.

After the opening of the convention, Mr. Arthur Todd, of Philadelphia, Pa., read a communication from Mr. Frank Cheshire, of London, England, who has made "foul brood" a study. Mr. Cheshire was made an honorary member of the Association. Mr. Todd announced that he would have "bacilli" and "spermatozoa" ready for microscopical examination on Thursday.

In the absence of Mr. Alley, who was to deliver an address on "Rearing Queens," Capt. Hetherington was called upon. Mr. H. stated that he had tried the experiment of introducing young and fertile queens to a colony in summer, in order to prevent swarming, but it had utterly failed. He had also experimented with introducing queens in cells protected by a film of foundation, which was wrapped around them, and, during the first season, had succeeded in introducing two or three hundred successfully; but on further testing, failures resulted. He did not wish to recommend anything new that had not been tested more than one season.

After some discussion, an article from the "Sun" was read, wherein it was stated that the queens of a certain bee-keeper had laid fertilized eggs, without having left the hives to meet the drone, the drone-larvæ being introduced into the royal jelly just after the queen-cell was sealed. Mr. Goodspeed had tested this, but was not sure of the results. He, however, protested against tampering with the cells.

"Dollar queens—their effect on the bees of the country," was discussed. The convention concluded that the cheap queen business is detrimental, and has done an immense amount of harm. Oftentimes they are not worth the price paid for them; but are sent out, without any test.

The subject of the "Best arrangement for comb honey," was then taken up, several parties having brought with them, for exhibition, various arrangements for securing comb honey; and these were described and commented upon.

SECOND DAY.

After opening the convention, President Root announced the following standing committees:

Resolutions—C. G. Dickinson, Arthur Todd, and J. Van Deusen.

Exhibits—Ira Barber, I. L. Schofield, and Geo. H. Knickerbocker.

Question Drawer—N. N. Betsinger, A. J. King, and Geo. W. House.

S. M. Locke then read an essay on "Introducing Queens." He said: The introduction of queens is, with me, a difficulty of the past. We introduce thousands of virgin queens every year, with no loss when care is used, and but very few even when done hurriedly. I have had a number of virgin queens caged in one hive, and have liberated one at a time. The first would usually mate on the first or second day, and as soon as mated I would cage her again, and liberate another, and so on. By this means, one could, in a few days, have 5 or 6 virgin queens all in one hive mated, and ready to be disposed of as circumstances required. Either nuclei or full colonies can be used; or if there is a short season when you do not care to have the old queens lay, cage some of the virgin queens in the hive, and before liberating them, cage the old one, proceeding as above, thus securing many fine queens. A queen should not be allowed to remain in a colony, till such time as she is so old and feeble as to require "crutches" to get around. Rather than allow that, I would prefer to have two queens laying in one hive at once.

"The marketing of apiarian products" was introduced. A general discussion ensued. Mr. King referred to the British honey organization, for example. California had secured an unusually large crop last season, which was put on the market at the same time with our own, and at low prices. This together with the general hard times, has brought about a glutted honey market. It was generally conceded that bee-keepers "must" work unitedly, in making a demand for honey, disposing of as much of it as possible, in home markets. To do this, it was suggested that bee and honey exhibits be held in connection with our county fair, and every means used to educate the people as to the value and uses of honey. Neat packages, labels, etc., had much to do with the sale of honey.

"What can be done to increase the demand for extracted honey?" The general opinion concurred with those relating to the sale of comb honey. Work up a home trade first, next put honey into the hands of those who use sweets in candies, medicines, cakes, canned fruit, etc., and wherever honey can be used to advantage; also have some neat pamphlets printed to give away with the honey.

Capt. Hetherington heartily endorsed the use of comb foundation in the brood-nest and in the boxes, and in the latter, foundation not more than 11 feet to the pound. Mr. Doolittle had found that if the bees were filled with wax secretion, they used that instead of the foundation.

Mr. Locke read a communication from Messrs. Thurber & Co., of New York City, requesting the Association to sign a protest against the proposed "Spanish Treaty," and a petition was signed, asking the United States Senate that the article admitting Cuban honey free into this country be stricken out of the proposed treaty. Messrs. Todd, L. C. Root, Vandervort, Betsinger, Locke and Elwood were appointed to present the petition.

The election of officers resulted as follows: L. C. Root, President; Frank I. C. Berick, Secretary; and I. L. Schofield, Treasurer.

President Root then read his annual address.

On the question of compelling recognition from our legislatures and agricultural societies, it was decided that united effort was necessary, and Capt. Hetherington in corroboration of this, gave his experience in working up an exhibition at the Centennial. The bee-keepers did not respond and join him as they should, and which, had he not worked hard, would have resulted in entire failure. It was decided that bee-keepers' exhibits should be connected with every agricultural fair, etc. The agricultural societies will welcome us when we do our part. There is no need of compelling the agricultural societies to do "their" part; when "our" associations are so organized that we can act unitedly, then we can make displays and exhibitions that will find a welcome anywhere. Let us do our part, and then we shall have something to offer the agricultural associations, when we appeal to them.

Mr. N. N. Betsinger stated that "atmospheric changes" was the cause of foul brood. The cure of the disease could only be effected by carrying out certain laws. Carbolic acid had been suggested as a cure; but in his opinion, it was worse than the disease. Fermented honey or pollen would cause the disease. He had learned by experience that if the fermented honey alone were fed, in less than ten days foul brood would appear. Such fermented honey was oftentimes found in the blossoms. In the cold, wet seasons, the disease prevails, because such seasons are favorable to fermentation. In dry seasons foul brood is never found. A complete cure would be found in simply feeding salt. Make a strong brine immerse the combs over night, and it will positively cure. As a preventive to the disease, keep a little weak brine in the yard, where the bees can get at it. Mr. B. partly fills a nail keg with sawdust, salt and water, and enough will ooze through the staves for the bees.

The discussion following Mr. Betsinger's remarks was extremely animated, as the idea of treating colonies to brine was considered by many as an original and questionable one.

The Convention then adjourned to meet at 7 p. m.

[*To be continued.*]

For the American Bee Journal.

Good Report from Cuba.

A. W. OSBURN.

In my last article on page 794 of the BEE JOURNAL for 1884, there was no positive evidence that I could be able to make a favorable report of our year's work, or of the honey resources of this country. At that time we could only muster 113 colonies in weak condition to store honey; for after a 4-months' honey-dearth none but the Holy Land bees were in any condition at all to gather the harvest that was so close upon them.

On Dec. 1 the bell-flower opened, and for 60 days these 113 colonies gathered honey as bees seldom do, I think; for at the end of 60 days the bell-flower bloom was pretty much gone, and the bees had stored 40,125 lbs. of extracted honey, making an average of 355 pounds per colony, with 10 pounds to spare. Good as you may think this yield is, it is not what is possible or probable, in Cuba, with bees in proper condition; but ours were not. A few of them, by Jan. 1, were in average condition for storing, and one of these stored 620 lbs.

This honey crop is to be credited to the great amount of honey secreted by the bell-flower, and not to our management, for that has been one succession of blunders from the time we landed the bees here, until last fall, when it began to dawn upon our beclouded vision that different management was necessary here from any other place in which we had ever kept bees. One thing we know, and that is, for Cuba the Holy Land bees are far superior to the Italians. Why? Because they will breed through the fall months and the dearth of honey, and when Dec. 1 comes with the honey harvest, they have bees to

gather it; while the Italian queens cease laying as soon as the honey stops coming in from the fields about July 1, and when Dec. 1 comes, they have hardly bees enough to protect their combs from the moth. Now, do not let any one understand me to say that I do not like the Italians—not by any means; they are all right for a summer honey-flow, but our honey-flow here comes right after a 4-months' dearth, and, as old bee-keepers know, there are but few strains of bees that will breed when there is no honey coming in. The Holy Land bees are much better in that respect, than the Italians, and, therefore, we consider them far preferable for this country.

Cuba, W. I.

For the American Bee Journal.

Report, Honey-Racks, Sections, etc.

D. VIDETO.

In the spring of 1884 I had 90 colonies, all strong and healthy for the season's work. Eleven had become queenless during the winter, some of which were dead and others nearly so, which were united to other colonies. Seventy were run for comb and 20 for extracted honey.

The season, here, was very poor; basswood and chestnut did not secrete any honey. White clover seemed abundant, but reluctantly yielded up its sweets. Very few colonies swarmed which were hived with the parent colonies that had cast a swarm from 1 to 5 days previous, after removing 2 or 3 frames of brood and honey, pinching off the queen-cells, and putting on surplus from the parent colony with one extra empty case of sections. This system, though highly recommended by some, proved a failure with me, as two-thirds, at least, swarmed out and seemed so demoralized that they reluctantly staid anywhere within bounds of the apiary. About one-third worked well, and from these and such colonies as did not swarm, I secured my surplus—about 2,500 pounds.

I sold white comb honey in one-pound sections, put up in nice crates, for 17 to 20 cents per pound, and dark, for 14 cents. This kind of honey passed off very nicely, and I hardly realized that the people were groaning under the pressure of "hard times;" but when I offered the extracted, the times to all appearances had changed—nobody wanted that kind of honey. The grocers had a supply, and could not sell their last year's stock. I took the trouble to examine their honey, and in every case I found it looking dingy, rusty and uninviting. After a careful survey over the extracted honey in the market, with its evident unpopularity, I became convinced that the less there was of this stuff forced upon the people, the better it would be for those bee-keepers who would desire to furnish the consumer with a nice article, inviting to look at and palatable to the taste.

After experimenting with the Heddon honey-rack with a slat honey-board, I am satisfied that no better is wanted. I made 100 cases with wide tin strips attached to the bottoms, on which the sections rest, thus avoiding a honey-board; but I do not like it so well. The objections are, the sections become glued to the tins and are not easily removed: besides, it is almost impossible, after removing the filled sections, to put in new ones without crushing bees. This difficulty, of course, may be averted by removing the case, but this being held down by the brace-comb attached to the brood-frames, makes it inexpedient.

I very much prefer the one-piece section to the dovetailed; not that they look any better when filled with honey, but they are much more easily cleaned and handled when working unfinished sections over for storage and use another season. I think that more patience is needed than the average bee-keeper possesses, to clean up one or two thousand dovetailed sections containing starters of foundation well drawn out, which is very desirable, and should be preserved. The place to store these sections is in the cases, in a clean room.

I would not use very much foundation in the sections. The "fish-bone" is very noticeable upon our table. Mrs. Videto cuts the honey down from either side and politely invites me to use the same to fill another section. In some instances, if I use very light foundation, the bees cut it down; if heavy, the bees accept it and add wax and honey to it. I do not think that bees draw out the foundation, as has been stated so often.

My 120 colonies had good flights on Dec. 29 and 30, 1884. Since that time part of them have been buried in snow, and all, I think, are enjoying their cold winter's nap.

North East, Pa.

For the American Bee Journal.

Comb Honey Production.

S. CORNEIL.

Bee-keepers should now be getting their hives and surplus cases ready for another season, and as there has been much said about hives containing continuous passage-ways, and hives with cases having two empty spaces to be crossed before the bees reach the sections, the results of a trial of these hives in adjacent apiaries during the past season may be interesting.

My neighbor, Mr. T. J. Webster, and I had 80 colonies each in the same kind of hive, the closed-end Quinby, at the beginning of the honey season. Mr. Webster worked 50 colonies, and I 59 for extracted honey, both using our old hives for that purpose. From my 59 colonies I obtained an average of about 85 pounds per colony, and from his 50 Mr. Webster secured an average of about 120 pounds each, showing that his field was better than mine. For comb honey, Mr. Webster used the Heddon-Langstroth hive and case, and I adapted a Tinker-case to my own frames, which are 10x16 inches, inside measure. My 21 colonies averaged almost 20 pounds each, while Mr. Webster got less than 4 pounds each on an average from his 30 colonies. Our increase was the same, each having 154 colonies ready for winter quarters. I fed 1,600 pounds of sugar, and Mr. Webster fed nearly 1,500 pounds of honey for winter stores.

As to experience in the production of comb honey: Mr. Webster was producing and selling comb honey for years before I commenced keeping bees. Both of our yards are well stocked with the best strains of Italian bees, and here is, I think, the explanation of Mr. Webster's failure in producing comb honey in a comparatively poor season. It is generally agreed, that to be successful with the Heddon case, either black bees or hybrids should be used, because the Italians are slow to cross the two empty spaces between the brood-frames and the sections. Mr. Webster's bees were too highly bred for that style of case, while mine, having continuous passage-ways from the brood-frames to the sections, had no such objections to going above with their surplus honey. This is the only explanation I know of for the difference in our results in producing comb honey.

After using hives with continuous passage-ways, I am free to say that I like them. I think that I can work as fast with them as with any other style, at the same time killing as few bees, and I never used either a "wedge," "chisel," or "brush-broom," nor did I ever need them.

Lindsay, Ont.

For the American Bee Journal.

The Cause of Bee-Diarrhea.

C. W. DAYTON, (50—112.)

If Mr. L. L. Triem (page 123) is sure that the colonies spoken of were breeding, and that the syrup given them entirely covered the pollen, then the natural supposition is that the bees would have remained as restless as before, until some pollen could have been obtained for the brood; but as by the pollen theory, perhaps the bees were made listless by the syrup, and, hence, it is amenable. That the hive of a diarrhetic colony, in a warm temperature, and at the time of the first outward appearance of the disease, should appear to be crowded with bees, is a logical and general sequence; but how old bees may be distinguished from young ones when in winter quarters, is not as apparent. Quite undoubtedly, instances of this kind will be a boon to such theorists as W. F. Clarke.

Sometime previous to the appearance of the diarrhetical evacuations, which time is greatly varied by conditions, a number of bees in the then quietly clustered colony may be seen to slightly move their bodies as if they were in the act of drawing a full breath, and frequently a single bee will suddenly run about the cluster as though seeking a more suitable place to rest. These movements are the

first visible signs of the disorder. Day by day the movements increase until each bee in the whole cluster will appear as if striving to better its position, and there will be a corresponding number of bees running about the hive and sipping moisture, if there is any to be found or appearing at the entrance to the hive. When on entering the cellar, and the bees appear at the entrances of the hives, there could be no plainer language by which to tell us that the conditions within their hives were such that they could not rest.

At about this time, if the covering of the brood-chamber be raised, one will be met by an odor which exactly resembles that from a very sour vinegar barrel. This odor generally (always in my experience) causes the uneasiness, and when Mr. Triem removed the burlap covers (as stated on page 123) the odor escaped, and the bees were found tightly clustered in the space of three days. Burlap, it appears, was too thick; yet a chaff cushion, with right conditions, might have been too thin a covering for the brood-chambers.

As this odor mingles with that of the cellar, the odor is formed which is a characteristic of the atmosphere of all cellars in which many bees have died of diarrhea. After a colony has manifested considerable uneasiness by the brisk movement of the bees on the approach of a light, some of the bees, though not having overly distended bodies, will begin spotting the combs or hive.

On page 5 we find Mr. Doolittle going back several years ago in order to find a case for the substantiation of his theory. Soon after reading Mr. D's article, I went to my bee-cellar and examined the combs in 8 colonies having diarrhea, and found brood in but one comb, and then only in three cells. On page 325 of the BEE JOURNAL for 1884, I wrote that when I moved 60 colonies to the summer stands, after a confinement of 145 days, 11 of the 15 diarrhetic colonies were amongst the 44 having no brood. Again, on page 663 of the same volume, I gave a preventive or cure (whichever it may be) which has been fully substantiated as correct by the past winter's experiments,

If any bee-keeper will, just before a cool and rainy day, remove the cover to a hive so that the water may run upon the combs containing brood, by the next morning the colony will be afflicted by a disorder that resembles diarrhea in every particular, and if the colony should then be placed in a dry atmosphere, in the space of 24 hours, the signs of the disease will be found to have disappeared.

So long as bee-keepers continue to wait until the bees are nearly afflicted to death before giving their attention, and so long as bee-keepers go on releasing that foul odor or allowing the escape of moisture while administering tinctured syrup, and then attest all cures to the effects of the syrup, just so long may they be expected to merit darkness and confusion regarding the cause of bee-diarrhea.

Bradford, ó Iowa.

For the American Bee Journal.

E. Iowa and W. Illinois Convention.

The third annual convention of the Eastern Iowa and Western Illinois Bee-Keepers' Association convened at 2 p. m. at Moore's Hall in Davenport, Iowa, on Feb. 18, 1885.

The meeting was called to order by President I. V. McCagg, and on motion, the reading of the minutes of the last meeting was dispensed with; the reports of the officers were postponed until the next afternoon. The election of officers was also deferred until the next day.

Twenty-one members reported 976 colonies in the spring of 1884, and 1,302 in the fall; 25,911 pounds of comb honey produced during the season of 1884, 1,950 pounds of extracted honey, and 228 pounds of beeswax; 712 colonies were put into cellars last fall, and 590 were left out-of doors.

President McCagg, L. H. Scudder and C. H. Dibbern were appointed a committee to present resolutions upon the death of John Madden.

HONEY-DEW.—Mr. Wadsworth said that bees did not work well on clover during the past season in his section; he did not know the reason for this, as there seemed to be enough clover in bloom. He said that they stored considerable honey-dew from the maple trees, but they used the most of it for breeding purposes. Contrary to his usual experience, his bees swarmed, and some absconded. His queens' wings were clipped, and yet they swarmed. He does not think that honey-dew is injurious, but he is not certain. Mr. Gast had seen the bees at work on almost all kinds of forest trees, but he is not certain whether honey-dew is caused by the bark-louse or some other plant-louse. He said that it made him uneasy, for he feared they would fill the brood-combs with it, and that it would prove injurious. His bees had gathered the bark-louse honey mostly in the fall, as his clover honey was as white as usual, but his fall honey was not. He had seen them work very hard on the walnut and black-oak trees. Mr. Dibbern said that his clover honey and fall honey were as good as usual. He thought that his bees gathered very little if any bark-louse honey. He said that it was new to him to learn that bark-lice were on other than the maple trees, as he had seen them only on the soft maple trees. Mr. Scudder said that his honey was gathered mostly from white clover during the first honey-flow, and from motherwort, catnip, smart-weed and heart's-ease in the fall. He did not think that they gathered much honey-dew, as it lasted only a few days. Mr. Wright said that his bees had gathered some honey-dew in the fall, and that he always found it in the inside sections, those near the outside generally containing good honey. Mr. Scudder said that during the fall of honey-dew, he had seen the bees on the grass and hedges, but could not account for their being there. President McCagg said that bark-lice thrive best on trees which grow on damp ground, in his section, as he noticed the trees on high ground had very few lice on them, while those on low ground were covered with lice.

SWEET CLOVER.—Mr. Dibbern though that it was worth $50 per acre to bee-keepers. He cultivates it in rows 4 feet apart, and plants it two years successively, as it does not bloom the first year, but the second year his was 14 feet high and bloomed freely when it seeded; but plants from this seed will not bloom the next season, but if planted for two years successively, there will be a continuous bloom. He had the best success in sowing it with oats, as the oats could be cut for feed, and thus pay for the use of the ground the first season. Mr. Scudder said that he thought it paid to sow sweet clover, and that Mr. Dibbern did not exaggerate any when he said that it was worth $50 per acre. Mr. Gast also thought that it paid to plant sweet clover, and he said that his cattle would eat it. He had the best success when sowing it alone, as he had sown some with oats, and the oats had choked it out. Mr. Dibbern said it required about 15 pounds of seed to the acre. He also said that cattle would eat it down when planted on the roadside, and thus interfere with its blooming. Mr. Wright said that he favored the sowing of sweet clover, as he thought that most of his honey came from that source last season.

HALF-POUND SECTIONS.—Mr. Dibbern said that he could produce as much honey in half-pound sections as in the two-pounds. Mr. Osborn said that he had the same experience; he had arranged half-pound, one-pound, and two-pound sections on one hive, and the bees filled them all at the same time. Mr. Scudder said that that was the best argument in favor of two-pound sections that he had ever heard, for if the bees would fill the two-pound sections as quickly as the half-pound or one-pound, he would certainly use the two-pound sections. Mr. Dibbern said that he had placed 72 half-pound sections and about half as many one-pound sections on the hives, and the bees filled one lot as quickly as the other. He said that the one-pounds were small enough for him. Mr. Scudder said that the largest average yield which he ever had was obtained in two-pound sections, being 150 pounds per colony, spring count.

OVERSTOCKING A LOCALITY.—Mr. Scudder said that it was a puzzle, for in a given locality there may be a thousand colonies, and one year they will do well, and the next year they will do poorly, and people will say that it is overstocked. Mr. Moore had 5 colonies, and only one of them stored any honey. Mr. Goos said that the one that gathered all the honey was probably the only strong colony among them.

Mr. McCagg said that he had a colony in a hive that had two holes in either side just above the bees, and he left them open so the wind can blow right over the bees, and he has never lost a colony in this hive.

On motion, the meeting then adjourned until 9 a. m. the next day.

The Convention was called to order at 11 a. m. by President McCagg. The committee on resolutions on the death of Mr. John Madden, then gave their report as follows:

WHEREAS, It being the will of God to remove from our midst one of our most zealous and ardent workers in apiculture, Mr. John Madden, who died on Sept. 19, 1884; therefore, be it

Resolved, By this Society that in the death of Mr. Madden we lose one of our most enthusiastic workers and supporters of this Association; although young in the culture of bees and production of honey, still he was one of the main pillars of apiculture, always ready with his kind, genial and social manners to give advice, or to lend a helping hand when and wherever needed. He was a kind husband, a loving parent, a genial friend, and a willing neighbor; mourned for by a loving wife and children, as well as a large circle of acquaintances, we can truly say that no member of this Association called from his labors on earth to that of peace and quietness, would be more missed and mourned than Mr. John Madden.

Resolved, That this be placed upon the minutes of the Association, and also that a copy thereof be furnished the widow.

HOME MARKET.—Mr. Sutherland said that he had sent all the members of this Association a circular in which he described a plan for creating a home honey market, his object being to canvass, the town and bring the honey before the people at regular intervals. He also asked that the Association form a bee-keepers' union, and he and Mr. Wells would act as managers and take the honey produced by the members, bring it before the people regularly, and thus create a demand and

enable them to keep up living prices. He would deduct 2½ cents per pound as commission from retail prices, and asked that the Association endorse the plan. On motion, Josh. Wadsworth, Wm. Kimball, Geo. L. Gast, E. R. Wright, and C. H. Dibbern were appointed a committee to act on Mr. Sutherland's proposition.

Adjourned until 2 p. m.

The meeting was called to order by the President at 2 p. m., and the first thing in order being the election of officers, the following were unanimously re-elected: I. V. McCagg, President; Geo. L. Gast, Vice-President; Wm. Goos, Secretary; I. Hall, Treasurer.

The executive committee reported that they were in favor of holding the annual picnic at Black Hawk's Watch Tower, south of Rock Island, on Aug. 13, 1885, and a motion to that effect was carried.

It was decided that the next annual convention be held in Davenport, Iowa, on the third Wednesday and Thursday in February, 1886.

The thanks of the Association were tendered to the officers of the past year, and Josh. Wadsworth, C. H. Dibbern, and E. R. Wright were appointed a committee to arrange for the next annual picnic.

Mr. Wm. Goos then read an essay on "Wintering Bees," in which he discussed the pollen and hibernation theories, and gave the results of his experiments and observations in wintering bees.

The report of the special committee appointed to act on Mr. Sutherland's proposition, was then read as follows:

The committee to whom was referred the proposition of the Bee-Keepers' Union, report that they have duly considered the matter, and while they commend the objects of the Union, and cheerfully recommend the projectors of the same as worthy of confidence, yet they deem it not advisable for this Association to commit itself further to the project.

The report of the special committee was approved, placed on file, and the committtee discharged.

The convention then adjourned until the above-mentioned time.

WM. GOOS, Sec.

I. V. McCAGG, Pres.

For the American Bee Journal.

Honey-Plants and Hibernation.

S. J. YOUNGMAN.

As I have seen some mention, in the different bee-papers, of the *Epilobium*, or willow-herb, I would like to have bee-keepers generally know some of the peculiar traits of the plant, so that none may be deceived. In this latitude, 43°, it grows in great profusion, but yields no honey whatever, as I have no recollection of ever having seen a honey-bee working on this plant in this vicinity; but in the northern counties of this State it is one of the chief honey-plants, yielding honey in large quantities and of good quality. It will never pay to plant it for honey alone, where land is valuable for farming purposes.

For any one wishing to sow for honey, why not sow Alsike clover seed? I have tried it, and find it a fine honey-producing plant, yielding a large amount of nectar, and it is visited by the bees at all times of the day. It also makes a fine quality of hay, and good pasture for all kinds of stock. It will thrive on wet as well as dry land, and in fact, it will grow where red clover will not. Buckwheat is also a good honey-plant, and the grain with the honey, which it usually yields, makes it a paying crop for those having a large number of colonies of bees; but the honey is of inferior quality, and unfit for wintering bees.

Some are carrying the hibernation idea rather further than it will stand, and they are including in their category, some animals that do not hibernate, among others, the hedgehog and porcupine, which live in hollow trees and never build nests of any kind. They are voracious eaters, scarcely ever missing a feast of their favorite food, the tender bark of trees, every 24 hours.

These scientists being so badly mistaken concerning the habits of this well known animal, perhaps they should be more careful in attributing this mysterious characteristic to the honey-bee.

Cato, ⊙ Mich.

For the American Bee Journal.

Hives, Frames and Feeding.

L. C. JOHNSON, M. D.

All brain-workers—indeed all busy men—should have some avocation wholly different from their ordinary vocation; that is, something which is more than an amusement that shall call aside the mind from its ordinary pursuits, into channels altogether different. Such an avocation I find in apiculture. Although some writers would drive out from the business all who are not professional apiarists, yet it is true that the history of our art shows that amateurs have been of very much greater service than injury to the business of bringing nectar, the "food of the gods," to the tables of men.

Believing that to get the best results we must not only have the best race of bees, but give them the best of accommodations, after some thought and a great deal of experimenting, I am now best pleased with the following described hives and frames, though probably not the best, yet I think them good.

The hive is made of lap barn-siding ⅞ of an inch thick, and it is 41 inches square outside measure, and arranged to contain 4 colonies, one side of the hive opening to the east, one south, one west, and one north. The outside walls are first nailed together, next the inside bottom is nailed in 4 inches from the bottom of the outside walls, next, straight partitions are put in from the inside bottom to the top of the hive, thus dividing it into four compartments 19 3-16 inches square, inside measure. For the lower story, a partition is now put in each compartment, dividing them unequally, the room next to the central partitions, the brood-chamber, being 15⅛x19 3-16 inches, and the smaller or outside space being 3⅛x19 3-16 inches. The latter is now filled with sawdust, and a board fitted and nailed over it. A ⅞-inch board is now nailed in the outer end of the brood-chamber, and a ½-inch board in the inner end, so it now measures 15⅛x18⅛ inches, inside measure, and takes the Langstroth frame.

Ten simplicity wide frames, each holding 8 one-pound sections, are used in the upper story; they reach from the outside wall of the hive to the central partitions, crossing the brood-chamber and the chaff packing. There is thus room for 80 pounds of surplus honey per colony, or 320 pounds to the hive.

The hive is now turned bottom upward, and the chaff or sawdust filling put in, and the outside bottom nailed in. The entrances are next cut ⅜x8 inches, slanting slightly downwards, then an alighting-board 4x12 inches is nailed at each entrance.

The roof is made from 12-inch, lap barn-siding, of which 4 boards nailed upon cleats form one side of the roof, the lower cleats fitting against the outside of the hive, while the other rests in a notch sawed at the centre of the gable ends of the hive; one side of the roof overlaps the other, as do the shingles at the comb of an ordinary house-roof. The total cost of this hive without frames, including one day's work to make it, is $3.55, or 88¾ cents per colony, for a complete two-story chaff hive.

The essentials of a good hive are: 1. It must thoroughly protect the bees from winter's cold, from spring and autumn's sudden changes, and from summer's heat. 2. It must afford good facilities for brood-rearing below, and for surplus storage above. 3. It must have good ventilation above and below. 4. It must be convenient for man. 5. It must present a neat and tasteful appearance. 6. It must be cheap and durable.

In the lower story of the above-described hive, each colony is surrounded on one end and one side by other colonies, on the other side by a double wall and 3⅛ inches of chaff or sawdust, and on the entrance end by a double wall with a sheet of heavy siding-paper between them; and in the fall, winter and spring, the bees are covered by a chaff cushion in the upper story. In summer the bees are more removed, and so better protected from the sun's rays than in single-walled hives. It is ventilated below by the wide entrance, and above by screen-covered holes through the gable-ends of the hive. The 10 brood-frames below with 10 wide frames above afford the amplest facilities for brood-rearing and for surplus storage. In addition to the above features, this hive is neat, convenient, cheap and durable, so, in my judgment, it fulfills the conditions for a good hive.

The frame that pleases me the best is the Langstroth frame made reversible by sawing off the ends of the top-bar even with the end-pieces; a strip of tin as wide as the end-pieces of the frame are thick, and 3 inches long, is tacked over each corner of the frame, thus forming a staple the width of the frame, which staple extends far enough beyond the top and bottom bars to permit a strip of hoop-iron to slide between it and the bars. This hoop-iron is 2 inches long, and has one end bent downward thus ⌐.

These strips slide through the tin stirrups at either the top or the bottom of the frame as desired. The hoop-iron being bent squarely downward, its end rests on the shoulder of the hive, thus obviating the necessity for metal rabbets to the hive. This attachment adds greatly to the strength of the corner of the frame, at the same time it is reversible.

The advantages of reversible frames I conceive to be these: 1. They enable us to get them full of comb solidly attached to both top and bottom bars—a very great advantage when handling heavy frames of honey in warm weather, as in extracting. 2. When the bees are disposed to crowd the queen by putting honey in the top of the brood-frames, by reversing the frames, we may induce the bees to carry the honey to the sections above where we want it; we thus secure the honey we want, and room for the most prolific queen. I presume they carry the honey above because their instinct teaches them to keep their honey above the brood. The same attachment being applied to the wide frames ought to enable us, by reversing the sections, to get them solidly filled with honey.

Now, as to bee-food: There are at least three points of vital importance about winter food for bees: 1. Quality of food. 2. Time of feeding. 3. Quantity of food. The food should be the best of honey, or syrup made from pure cane-sugar (I use the best grade of granulated sugar dissolved in cold water). The time of feeding should always be early enough in the fall for the syrup to be put into the cells, ripened and sealed over; in this locality I should say, before the middle of October. The quantity, I think, should be 25 pounds per colony. I do not think that if a colony is properly hived it will consume half this amount during an average winter (at least mine do not), but they can use it all profitably during early spring breeding.

In this latitude I think it best that all colonies shall have enough pollen for early brood-rearing, in order that the colonies may be sufficiently strong for the white clover harvest. We need a large number of careful experiments to determine certainly whether colonies having pollen of their own gathering stored in the hive, or those fed with rye meal in February and March, or those having to wait to gather spring pollen in order to begin brood-rearing, shall be in the best condition for the June honey-flow. My own experiments thus far indicate that to have pollen of their own gathering in the combs is much the best, and next best is to feed rye meal in February and March. My experiments on this subject have been but few, having had only 12 colonies one winter and 24 the next, and these, of course, are too few to settle the matter in favor of any method. The coming spring I shall be prepared to report from much larger numbers.

Belonging to the subject of bee-food, is the question of the best formula for food for shipping queens. After having tried various formulæ, I think that used by Mr. Benton is better than any of which I have any knowledge. Indeed, the purity of its ingredients, and the method of its preparation cannot fail to produce a perfect queen-food. With proper food it has now been demonstrated that queens will live in queen-mailing cages at least from 4 to 6 weeks. I have received queens through the mail which, after their journey of thousands of miles, were in perfect health and prime condition.

It seems to me that in a perfect hive and perfect food lies the solution of the wintering problem. I think that it would be of exceeding interest and value to have reports from the large field of correspondents, of their experience in wintering in chaff hives; and under this head I include all double walled hives, whether packed with chaff, sawdust, or shavings.

Fountain City, Ind.

For the American Bee Journal.

Pollen and Brood-Rearing.

13—WALTER HARMER, (29—56).

As my observations so far have made me a believer in the pollen theory, I would like to suggest some questions which Mr. Doolittle's article, on page 134, seems to call for. Mr. D. describes an experiment with a colony having brood in all stages, considerable pollen, but no honey, and how the bees fared for the next few days, eating the eggs first, then the larvæ, next the more developed brood, and last of all the pollen. We see by this that bees loathe to feed on pollen alone, and will often starve first, as proven by Mr. D. in his experiment spoken of in the first column of the same article.

Mr. D. says that from these observations he has formed the opinions which he had heretofore given, that old bees only partake of pollen in the form of chyme. Mr. D. tells us what this chyme is made of, and if he is correct, as I do not doubt, it was impossible for the bees to make chyme in either of the cases spoken of after the honey was all consumed. Now, if old bees will not or cannot eat pollen unless it is digested for them and formed into chyme, what bees make the chyme for the brood in the spring, when a colony has been without brood for six or seven months (as I believe they often are), as there can be none but old ones in the hive? I believe that old bees can make it, and that they will also often eat pollen rather than starve when there is no brood in the hive, for I have had what I would consider conclusive proof, one case only a few days ago which resulted in diarrhea and death.

Mr. D's answer to Query No. 28, gives rise to other questions on the same subject. His answer is: "Brood-rearing resulting in pollen, in the form of chyme, being eaten by the bees which gave them the diarrhea." Now, as bees will often have the diarrhea without all the material for making chyme, I do not think that it (chyme) will give it to them, especially as the most indigestible parts of the pollen have been retained by the bees in the making of it, and this, I believe, is what brings on the trouble; besides, bees do not make chyme for the general use of the colony, but for rearing brood. I do not know that there is any difference in the disease, whether caused by eating pollen for the want of something better, or by making of chyme for brood-rearing; however, I think that the latter requires our most earnest consideration, because in the first, it matters not whether bees starve or die with diarrhea, except that when they die of this disease they leave the hive in a filthy condition.

I believe that the pollen theory has come to stay, and that those who say that it must go, have something to learn yet, as well as the rest of us. If they would consider that there are so many different kinds of pollen, and also that there must be many stages of preservation and decomposition, they would begin to see that we had only begun to handle the subject, instead of getting rid of it as easily, apparently, as one would thirst, by taking a drink of water. In my opinion it is not so easily dealt with. I do not believe that confinement will cause the disease, but it will aggravate it as well as will cold. If you turn to page 377 of the BEE JOURNAL for 1884, it will be seen that my bees were confined for 174 days (the longest confinement, I think, ever reported), and they came through with no sign of the disease; but I believe there was little or no breeding in all that time, as the small amount of food consumed, and other observations noted at the time, would indicate.

The above-mentioned differences in the condition of pollen, as well as the difference there may be in the condition of the bees themselves, I think will account for so many disagreeing on the subject. In conclusion I would say that I do not wish to attack any particular article or person, for it is the truth that I am after, and if I can help to get it, I shall be satisfied.

Manistee, Mich.

Local Convention Directory.

1885. *Time and place of Meeting.*

Apr. 1.—N. E. Kentucky, at Walton, Ky.
G. W. Cree, Sec., Covington, Ky.

Apr. 3.—N. Ind. and S. Mich., at Goshen, Ind.
F. L. Putt, Sec., Goshen, Ind.

Apr. 3.—N. E. Kansas, at Hiawatha, Kans.
L. C. Clark, Sec., Granada, Kans.

Apr. 8.—N. W. Indiana, at Laporte, Ind.
A. Fahnestock, Sec., Laporte, Ind.

Apr. 11.—Wabash County, at Wabash, Ind.
Henry Cripe, Sec., N. Manchester, Ind.

Apr. 23.—Union Ky., at Eminence, Ky.
G. W. Demaree, Sec., Christiansburg, Ky.

Apr. 23, 24.—Western, at Independence, Mo.
C. M. Crandall, Sec., Independence, Mo.

Apr. 25.—Union, at Earlham, Iowa.
M. E. Darby, Sec., Dexter, Iowa.

Apr. 28.—DesMoines County, at Burlington, Iowa.
Jno. Nau, Sec., Middleton, Iowa.

May 4.—Linwood, Wis., at Rock Elm Centre, Wis.
B. Thomson, Sec., Waverly, Wis.

May 7.—Progressive, at Bushnell, Ills.
J. G. Norton, Sec., Macomb, Ills.

May 19.—N. W. Ills., and S. W. Wis., at Davis, Ills.
Jonathan Stewart, Sec., Rock City, Ill.

May 28.—N. Mich. Picnic, near McBride, Mich.
F. A. Palmer, Sec., McBride, Mich.

June 19.—Willamette Valley, at La Fayette, Oreg.
E. J. Hadley, Sec.

Dec. 8—10.—Michigan State, at Detroit, Mich.
H. D. Cutting, Sec., Clinton, Mich.

SELECTIONS FROM OUR LETTER BOX

No Trouble in Wintering.—J. W. Eckman, Richmond, Tex., on March 8, 1885, writes thus:

My bees commenced carrying in pollen on Jan. 29, but we had so much cold and wet weather in February, that they did little towards breeding up. Since March 1, they have been doing finely. I had drones flying on March 1. We have no trouble down here in wintering bees; but our greatest trouble is, how to manage them successfully in the summer so as to keep down excessive swarming.

Never Wintered Better.—A. A. Pierce, Westport, N. Y., on March 13, 1885, writes:

I am wintering 60 colonies of black bees all in the cellar, and they seem to be wintering well. All are alive and quiet, the mercury in the cellar ranging from 40° to 45° above zero. The weather here has been extremely cold since Feb. 1, the mercury ranging, on several occasions, from 10° to 36° below zero. I have kept bees for the last ten years, usually having from 40 to 80 colonies, and I have never known them to winter better than they have so far this winter.

Great Loss of Bees.—H. Clark, Palmyra, Iowa, on March 13, 1885, writes as follows:

The snow is mostly gone, and white clover looks beautiful and green. There are but few of the little bees left, this winter's mortality among them far exceeding that of 1880-81. I have lately asked 10 bee-men in this neighborhood how their bees are, and the best answers I got were, 4 colonies left out of 12, and 7 from 90; my own report is, 20 put into the cellar, and 1 left; 40 packed in straw and hay, and 6 left. The cause seems to be diarrhea.

Bees in Splendid Condition.—A. J. Hatfield, South Bend, Ind., on Mar. 14, 1885, writes:

Bees are in splendid condition in the cellar. I have 195 colonies. I am moving my apiary from New Carlisle, Ind., to near this place.

Still Cold and Bees Uneasy.—W. J. Davis, Youngsville, Pa., on March 16, 1885, writes thus:

The weather in this locality is still cold, and the ground is frozen 4 feet deep, and covered with from 3 to 4 inches of snow and ice. Bees have not had a flight in 4 months. The 100 colonies which I placed in the cellar on Nov. 15, 1884, are not only quiet, but to all appearances with bodies as attenuate as they were 4 months ago; but the 100 colonies placed in my wintering house from Nov. 6 to the 20, are getting uneasy, their bodies are becoming distended, and one colony shows signs of diarrhea. Their great need now is a cleansing flight, and there is but little prospect of it in the near future. But notwithstanding the wintry prospect, and snow and ice everywhere, the first robin put in an appearance yesterday. Where not properly cared for, the loss of bees will, no doubt, be heavy.

Good Weather Needed.—Jno. A. Buchanan, Holiday's Cove, W. Va., on March 13, 1885, writes:

Winter still continues. On two or three nights lately the thermometer indicated as low as 8° above zero. Bees need good weather, and they need it badly. The first few days of this month were tolerably fair for opening hives, and I overhauled my home apiary of 65 colonies. All were in reasonably fair condition save 5 colonies, which were found queenless. The bees were pretty restless for a flight when the opportunity came, as honey-dew, in some degree, constituted their stores. Young bees are now hatching quite as fast as the old ones disappear. We think that we are "out of the woods" now, but we might feel better if more moderate weather would come to stay. Generally speaking, the losses in this part of the country are heavy.

Bees Storing Honey.—8—W. S. Cauthen, (79—79), Pleasant Hill, S. C., on March 11, 1885, says:

We have had a long, cold winter, but it is warm at last, and the bees are storing honey lively. Maples and tag-alder are just in full bloom, but generally they bloom in January.

Bees Swarming, etc.—Harry G. Burnet, Alva, Fla., on March 3, 1885, writes:

I wonder what our frozen-up northern fellow bee-keepers will think when I say that we are busy here hiving swarms, extracting honey, rearing queens, etc. Quite a contrast to the state of affairs in the North. A fellow bee-keeper at the North, writes me that "it seems strange to hear of 'bees swarming;' about here they are feezing to death—the coldest winter on record." I know by bitter experience how it is to have bees "frozen to death," for 14 years among Iowa blizzards, indelibly impressed that on my mind; but I found a happy and pleasant solution of the difficulty in coming here. There are no winter or spring losses here, and a never-failing honey supply. No more blizzards for me.

Do Bees Ever Freeze?—Wm. Anderson, Sherman, Mo., writes as follows:

I notice that some are of the opinion that a colony of bees will not freeze; but I think they will. Last fall I prepared 30 colonies for winter, 5 of them having been late swarms, and the remainder being strong colonies with plenty of stores. On Jan. 30 and 31, and Feb. 1, they had good flights, and I examined them, and found them in good condition, excepting 2 of the 5 colonies were dead, and the other 3 were short of honey. I fed them, and they are still alive. I use the "Simplicity" chaff hives, and I had 12 colonies in the "Simplicity" hives, some in the chaff hives, and the remainder in box-hives. On Feb. 16, 17, and 18 it was severely cold, and 5 of my best colonies froze, the bees being drawn up between the frames by the frost, while the other colonies were all right. With a small pair of tweezers I cleaned them all out, as some of them were down in the cells, and they had at least 20 pounds of honey. While it was 18° below zero, the coldest that we have had here this winter, the other colonies were all in good condition, and there were no signs of bee-diarrhea whatever. My hives are all on the north side of my house, and they are very much sheltered from north and west winds. Some bee-keepers in this section have lost all their bees this winter, and some of them had plenty of honey.

"Northwestern" at Detroit.—James Heddon gives his opinion on the subject as follows:

I vote "no," and President Miller says that the reasons for our preferences are in order. I give mine as follows: 1. Because the National and the Michigan State do not need us as a convention, and will receive nearly every one as an individual attendant that would go if the "Northwestern" were adjourned. 2. So far as I can learn, the "Northwestern" is much the best, and most practical and instructive body, and the consolidation proposed would be like emptying the contents of a large dish into a small one—there would be a muss. 3. Chicago is so easily and cheaply (about ⅓ rate) accessible to so many practical honey-producers who have business there other than that of attending the convention, that I think I see a loss in throwing up our appointment there next October. 4. Any series of meetings to grow and have good attendance, must be regular in their maintainance. 5. We all intend to go to Detroit, that could possibly go if the "Northwestern" were adjourned, and for one, I hope to attend both. Let us resolve to "hold fast that which is good," and go to both places.

Bees Have Starved.—L. J. Diehl, Butler, Ind., on March 15, 1885 writes as follows:

This has been the hardest winter on bees for many years, and in this locality at least two-thirds of the bees are dead, the trouble having been the long continued cold which caused strong colonies to starve with plenty of honey in the hive. I have examined a great many of the hives in which the bees were dead, and 9 out of 10 had starved. Starvation with plenty of stores, but out of reach on account of continued cold, has been the cause of loss here. This will be a good year for those having bees to sell, for in nearly every case, where bee-keepers have lost all, or nearly all, they intend to buy more, if they can find out where to get them. What bees are left on the summer stands are very weak. I cannot say what my loss is, as yet, but I will report later.

Convention Notices.

☞ On account of the prevalence of small-pox in St. Joseph, Mo., the semi-annual meeting of the Western Bee-Keepers' Association, will be held at the Court House, in Independence, Mo., on April 23 and 24, 1885.
C. M. CRANDALL, *Sec.*

☞ The Northwestern Indiana Bee-Keepers' Association, will meet on Wednesday, April 8, 1885, at 10 a. m., in the Jury Room at the Court House in Laporte, Ind.
A. FAHNESTOCK, *Sec.*

☞ The Union Kentucky Bee-Keepers' Society will hold their spring meeting in Grange Hall, at Eminence, Ky., on Thursday, April 23, 1885. All are cordially invited to attend.
G. W. DEMAREE, *Sec.*

☞ The next meeting of the Union Bee-Keepers' Association of Western Iowa, will be held on April 25, 1885, at Earlham, Iowa. M. E. DARBY, *Sec.*

☞ The semi-annual meeting of the Northeastern Kentucky Bee-Keepers' Association, will be held at Odd Fellows' Hall in Walton, Ky., on April 1, 1885, at 10 a. m. A free dinner will be given by the bee-keepers of the neighborhood. G. W. CREE, *Sec.*

☞ The Progressive Bee-Keepers' Association of Western Illinois will meet in Bushnell, Ills., on Thursday, May 7, 1885. Let every bee-keeper who can, be present and enjoy the meeting. J. G. NORTON, *Sec.*

☞ The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend. E. J. HADLEY, *Sec.*

☞ The Northern Ind. and Southern Mich. Bee-Keepers' Association will meet at the Court House in Goshen, Ind., on April 3, 1885. All interested in bee-keeping are invited to attend. F. L. PUTT, *Sec.*

☞ The Northeastern Kansas Bee-Keepers' Association will hold its fifth semi-annual meeting at the Court House in Hiawatha, Kans., on Apr. 3, 1885, at 10 a. m. All are invited.
L. C. CLARK, *Sec.*

☞ The Dead-Letter Office, which receives 12,000 to 15,000 or more letters every day in the year, is a monument of the carelessness of the people. That office would be speedily closed if every writer of a letter always used the "return request envelopes," giving *on* them his own or her own address or residence. This, too, would be a great satisfaction to the writers, for they would then know in due time if a letter was not delivered.

Special Notices.

☞ The stock of the Bee-Keepers' Supply Co., of New Comerstown, O., is being rapidly sold. The standing of the incorporators is vouched for by bankers and others in that city. Mr. Shoemaker desires to say that his correspondence is so large that it is some behind, but letters of inquiry will be answered, and receipts for stock subscribed will be sent as rapidly as possible. The laws of Ohio decide that there cannot be less than 5 nor more than 15 directors; and require a statement of the business sent to every stockholder once a year. The profits, or dividends, are declared by the stockholders at their annual meeting. Those who want stock in this Co. are requested to apply soon, as it is being rapidly taken. *

☞ For two subscribers for the Weekly BEE JOURNAL (or 8 for the Monthly) for one year, we will present a Pocket Dictionary, and send it by mail postpaid.

☞ Do not forget to send for a Binder in which to file your JOURNAL and thus have the full benefit of it during the whole year.

FRUIT GROWING.—We have received a copy of an illustrated pamphlet of 64 pages, entitled "How to Propagate and Grow Fruit," by Chas. A. Green, editor of the *Fruit Grower*, Rochester, N. Y. Price 50 cents. To any one sending us a new subscriber for the Weekly or 4 for the Monthly, besides his renewal for either edition, we will present a copy of this book.

Farmer's Account Book.

This valuable book contains 166 pages, is nicely printed on writing paper, ruled and bound, and the price is $3.00. We will club it and the Weekly BEE JOURNAL for a year for $4.00. If you have already sent us $2.00 for the Weekly BEE JOURNAL for a year, we will send the Book for another $2.00, making $4.00 in all. If you want it sent by mail, add 20 cents for postage.

We can supply these books at the publisher's price, or will make a **present** of one copy for every club of TEN subscribers to the Weekly BEE JOURNAL for one year, with $20. Four subscribers to the Monthly will count the same as one for the Weekly.

Now is the time to get up Clubs. Who will work for a copy of this valuable book.

CLUBBING LIST.

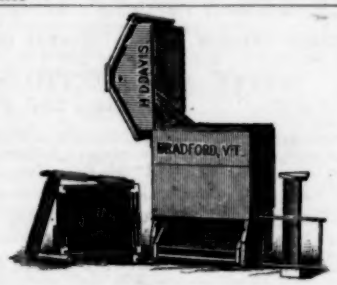
We will supply the **American Bee Journal** one year, and any of the following Books, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	*Club*
The Weekly Bee Journal,	$2 00..	
and Cook's Manual, latest edition	3 25..	3 00
Bees and Honey (T.G.Newman) cloth	3 00..	2 75
Bees and Honey (paper covers)	2 75..	2 50
Binder for Weekly Bee Journal	2 75..	2 50
Apiary Register for 100 colonies	3 25..	3 00
Dzierzon's New Bee Book (cloth)	4 00..	3 00
Dzierzon's New Book (paper covers)	3 50..	2 75
Quinby's New Bee-Keeping.	3 50..	3 25
Langstroth's Standard Work	4 00..	3 75
Root's A B C of Bee Culture (cloth)	3 25..	3 10
Alley's Queen Rearing	3 00..	2 75
The Weekly Bee Journal one year		
and Gleanings in Bee-Culture (A. I. Root)	3 00..	2 75
Bee-Keepers' Magazine (A. J. King)	3 00..	2 75
Bee-Keepers' Guide (A. G. Hill)	2 50..	2 35
Kansas Bee-Keeper	3 00..	2 75
The Apiculturist, (Silas M. Locke)	3 00..	2 90
The 6 above-named papers	6 50..	6 00

THOMAS G. NEWMAN,
925 West Madison Street., Chicago, Ill.

FREE TO ALL!

MY Illustrated Price-List for 1885, will inform you at what **low figures** you can get the very best Comb Foundation in the market; also White Poplar Sections of a superior quality and all other **APIARIAN SUPPLIES.** And as it also contains many valuable hints, I wish it to reach every bee-keeper. Send address plainly written to
JAMES B. MASON, Mechanic Falls, Me.
12A1t



New England No. 7 Bee-Hive

We warrant it to be without an equal as a practical hive for general use.

We furnish at short notice APIARIAN SUPPLIES of every description.

We guarantee if directions are carefully followed, that not ONE COLONY need be lost during winter with this Hive!

WE manufacture and keep in stock white poplar SECTIONS of all sizes of the finest quality and at bottom prices. We guarantee satisfaction. Don't purchase until you send for our Circular and prices. Send 4-cent stamp for sample Sections. Circular free. Address,
HILAS D. DAVIS, Bradford, Vt.
13A1t 4B1t

"BOSS" ONE-PIECE
SECTIONS.

One-lb. (4¼x4¼) in lots of 500 to 4,000 $5.00
Ditto Ditto 5,000 to 10,000 4.50
Ditto Ditto 10,000 to 25,000 4.00

The one-lb. Section is 17 inches long. For any sizes between 17 and 20 inches in length, add 5 per cent. For any sizes between 20 and 24 inches, add 10 per cent. Add the above per centage to the price of one-lb. Sections in the same quantities.
We make any size or width desired.

J. FORNCROOK & CO.,
10A4t Watertown, Wis., Mar. 1, 1885.

☞ Alfred H. Newman, of Chicago, sells the one-piece Sections manufactured by us.

Vandervort Foundation Mill.

6 Inch, Price, $25.00.

It makes the finest extra thin Foundation for comb honey. For Sale by

ALFRED H. NEWMAN.
923 West Madison Street, CHICAGO, Ill.

500 Names wanted for my 18-page Illustrated Catalogue of **Bee-Keepers' Supplies** for 1885. Send for it! I can SAVE you money. HENRY CRIPE, N. Manchester, Ind.
9A4t 4B1t

80 COLONIES of Ital. Bees for sale by lb. or colony. Simp. hives, L. frames, 9¾x17¾. Wired Combs built from foundation combs straight as boards. Queens and Given Foundation for sale. Send for Circular. T. H. KLOER, Terre Haute, Vigo County, Ind. 10A3t

JOHN HERR & CO., Beaver Dam, Dodge Co., Wis., Manufacturers of
HIVES AND SECTIONS.
11A4t 3B2t ☞ **Price List Free.**

DOOLITTLE.—For prices of his QUEENS see page 158 of BEE JOURNAL, or send for Circular. G. M. DOOLITTLE, Borodino, N. Y.
11E15t

FOR SALE AT A BARGAIN.—15 colonies of Italian Bees, in chaff hives; 30 extra chaff and Simplicity Hives, and everything needed to run an apiary. A bargain for some one.
12A1t R. B. COMMERFORD, Sterling, Ills.

Land-Owners, Attention!

All persons who have lost Real Estate in Iowa, by reason of TAX OR JUDICIAL SALES, are invited to correspond with **RICKEL & BULL,** Attorneys at Law, 41 First Ave., **Cedar Rapids, Iowa,** and they will learn something to their advantage.

Bee-keepers' Supplies,

Standard Langstroth,

Quinby Standing-Frame,

And all other kinds of **Hives,**

MADE TO ORDER,

Quinby Smoker a specialty.

I shall supply anything you need in the Apiary. Send for Illustrated Price List.

W. E. CLARK, successor to L. C. Root,
7A13t ORISKANY, Oneida County, N. Y.

BEESWAX.

I pay **25c.** per pound delivered here, for yellow Beeswax. To avoid mistakes, the shipper's name should always be on each package.

ALFRED H. NEWMAN,
923 West Madison St., CHICAGO, ILL.

Choice Comb Foundation

I **WISH** to say to my numerous friends that I will use, the coming season, a new Vandervort Machine of the latest make, and will send out only the finest work; also Dunham heavy. Send for samples and Circular.

J. V. CALDWELL,
9Atf CAMBRIDGE, ILL.

SUMNER & PRIME,

Bristol, Vt.,

BEE-KEEPERS' SUPPLIES.

WE HAVE just completed our Factory, furnished it with the most improved Machinery, and are now prepared to fill all orders for **BEE-FIXTURES** of every description. **WHITE POPLAR SECTIONS** of all sizes a specialty. All orders will receive prompt attention. Send for Catalogue Price-List and samples. 10A12t

THE INVERTIBLE HIVE!

INVERTIBLE FRAMES,
Invertible Surplus Honey Cases,
Entrance Feeders, Top and Bottom Feeders,
Hive-Lifting Device, Honey Extractors,
Wax Extractors, Comb Foundation, etc.

☞ My new Illustrated Catalogue is now ready, and will be mailed to all who may apply for it. Address,

J. M. SHUCK,
DES MOINES, IOWA.
10A1y

Bee-Keepers' Supplies.

We have added to our LARGE FACTORY a SPECIAL DEPARTMENT for the

Manufacturing of Bee-Hives,

AND

White Poplar Dovetailed SECTIONS.
Also, One and Two-piece

☞ All Orders will be filled promptly at the **LOWEST FIGURES.**

Send Stamp for Catalogue and Samples.

The H. F. MOELLER M'f'g Co.
1A26t DAVENPORT, IOWA.

J. W. ECKMAN,

DEALER IN

Pure Italian Bees and Queens

For further information, send for Circular.
11A13t RICHMOND, Fort Bend Co. TEXAS.

New and Enlarged Edition
OF
BEES and HONEY,
OR THE
Management of an Apiary for Pleasure and Profit; by

THOMAS G. NEWMAN.
Editor of the Weekly Bee Journal.

925 West Madison Street, Chicago, Ill.

It contains 220 profusely illustrated pages, is "fully up with the times" in all the improvements and inventions in this rapidly developing pursuit, and presents the apiarist with everything that can aid in the successful management of the Honey-Bee, and at the same time produce the most honey in its best and most attractive condition.

PRICE—Bound in cloth, $1.00; in paper covers, 75 cents, postpaid.

☞ **A Liberal Discount to Dealers, by the Dozen or Hundred.**

☞ The Monthly BEE JOURNAL for a year and the pamphlet "Bees and Honey," will both be sent for $1.

WANTED Situation by a Practical bee keeper. Address W. B. DRESSER, Hillsdale, Mich
12A1t

NOTICE!

The following goods For Sale at **a bargain:**

100,000 2-lb. One-Piece Sections,
5¼x6x1¾.

1,000 LANGSTROTH HIVES,

in the flat; 500 one-and-one-half story Simplicity Hives, in the flat; also 500 Simplicities, nailed and painted, ready for the bees. All of the above goods are First-Class. Write for prices.

R. L. SHOEMAKER,
12Atf NEW COMERSTOWN, O.

APIARIAN SUPPLIES!!
INDUSTRAL Summer & Winter HIVE Combination Family Crate, Honey-Board and Sectional Rack, Visitor Smoker, etc. Circulars free. **J. W. CLARK.** (box 31)
12A1t Clarksburg, Moniteau Co., Mo.

PERFUME **40 Hidden Name** and Embossed **CARDS** and this Perfumed Satchet for 12c. Samples, 4c. CLINTON & CO., North Haven, Conn.
☞ *We have seen cards from many firms, but none as pretty as those from Clinton & Co.*
11A10t

60 New Style, Embossed Hidden Name and Chromo Visiting Cards no 2 alike, name on, 10c., 13 packs $1. Warranted best sold. Sample Book, 4c. L. JONES & CO., Nassau, N. Y.
11A1y

50 Perfumed, Embossed, hidden name, &c. Cards Sample Book and 51 Scrap Pictures 10c. Globe Co., Northford, Conn. 12A4t

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

Muth's Honey Extractor,

Square Glass Honey Jars, Tin Buckets, Langstroth Bee-Hives, Honey-Sections, etc.

Apply to **C. F. MUTH,**
976 and 978 Central Ave., **CINCINNATI, O.**
☞ **Send 10c. for Practical Hints to Bee-Keepers.**